



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/776,390

02/11/2004

Arlie R. Conner

59516US002

3917

32692 7590 12/20/2006
3M INNOVATIVE PROPERTIES COMPANY
PO BOX 33427
ST. PAUL, MN 55133-3427

EXAMINER

TRUONG, BAO Q

ART UNIT

PAPER NUMBER

2875

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
--	-----------	---------------

3 MONTHS

12/20/2006

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/776,390	Applicant(s) CONNER, ARLIE R.	
	Examiner Bao Q. Truong	Art Unit 2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-15, 17-19 and 21-28 is/are rejected.
- 7) ☒ Claim(s) 16 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by F.W. Gehrke [US 1,932,817].

Regarding claim 1, F.W. Gehrke discloses an optical system having an image-forming device [film] and an illumination system including a light source, a first lens [A], and a second lens [B] (figures 1-2, title, whole document).

Regarding claim 3, F.W. Gehrke discloses the first and the second lenses [A, B] being held together by an optically clear material [S] (figure 1).

3. Claims 11, 14, 15 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Walter D'Arcy Ryan [US 1,428,662].

Regarding claims 11 and 15, Ryan discloses an illumination system having a plurality of light source modules [11, 12], a system of optical elements having a plurality of pairs of meniscus lenses [15, 16, 18, 19], each pair [15 and 16; 18 and 19] being associated with a light source [11; 12] and including a first meniscus lens [15, 18] and a second meniscus lens [16, 19], and wherein all first meniscus lenses [15, 18] have

Art Unit: 2875

substantially the same shape and size and all second meniscus lenses [16, 19] have substantially the same shape and size, and the plurality of light source modules [11, 12] being disposed within a non-radially symmetrical aperture [of housing 10] (figure 2).

Regarding claim 14, Ryan discloses the plurality of the pairs of meniscus lens [15, 16, 18, 19] being configured substantially as a double-layered rectangular closely packed array and the plurality of light source modules [11, 12] being disposed to substantially track that configuration (figures 1-2).

Regarding claim 17, Ryan discloses each light source module [11, 12] having an emitting surface [filament] and a substantially optically clear dome [envelope] disposed over the emitting surface (figure 2).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over F.W. Gehrke [US 1,932,817] in view of W.G. Wolfe [US 1,900,966].

Regarding claim 2, F.W. Gehrke discloses the first and second lenses [A, B] but does not clearly show the first lens being contact with the second lens.

Art Unit: 2875

W.G. Wolfe teaches the two lenses [3] being contact each other to have no refractive effect on a light beam in a projecting apparatus (figures 1-2, page 2 lines 45-55).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the two lenses of F.W. Gehrke being in contact together as taught by W.G. Wolfe to eliminate refractive effect on a light beam for purpose of providing an advantageous way of brightness improvement of a projection apparatus.

6. Claims 5-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over F.W. Gehrke in view of Hanano [US 2004/0062044 A1].

Regarding claim 5, F.W. Gehrke discloses a film projector having a light source module [u1] but does not disclose the pyramid collector disposed over the emitting surface.

Hanano discloses an image projection having the pyramid collector [13] disposed over the emitting surface of the LED [1] (figures 3, 5, 6, 10 and 11, paragraph 0088).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the film projector of F.W. Gehrke with the pyramid collector as taught by Hanano for purpose of increasing light output efficiency.

Regarding claim 6, Hanano discloses the pyramid collector having a generally square proximate end and a generally rectangular distal end [at 13c] (figure 11).

Regarding claim 7, Hanano discloses a plurality of LED [1] having a plurality of emitting surfaces disposed next to each other (figures 5 and 6).

Regarding claims 8, 9 and 10, Hanano discloses LEDs [1] inherently including colors, red, blue and green (paragraph 0010; see figure 9 of U.S. 6,227,669).

7. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ryan [US 1,428,662] in view of W.G. Wolf [US 1,900,966].

Regarding claim 12, Ryan discloses the first and second lenses [15, 16] but does not clearly show the first lens being contact with the second lens.

W.G. Wolfe teaches the two lenses [3] being contact each other to have no refractive effect on a light beam (figures 1-2, page 2 lines 45-55).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the two lenses of Ryan being in contact together as taught by W.G. Wolfe to eliminate refractive effect on a light beam for purpose of providing an advantageous way of brightness improvement.

8. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ryan [US 1,428,662].

Regarding claim 13, Ryan discloses the plurality of the pairs of meniscus lens [15, 16, 18, 19] being configured substantially as a double-layered rectangular closely packed array and the plurality of light source modules [11, 12] being disposed to

Art Unit: 2875

substantially track that configuration (figures 1-2). Ryan does not disclose the double-layered hexagonal. This is considered to be changed in shape.

Since it has been held by the courts that a change in shape or configuration, without any criticality, is nothing more than one of numerous shapes that one of ordinary skill in the art will find obvious to provide based on the suitability for the intended final application. See *In re Dailey*, 149 USPQ 47 (CCPA 1976).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the double-layered rectangular of Ryan with the double-layered hexagonal shape because it appears that the disclosed device would perform equally well shaped as disclosed by the hexagonal shape.

9. Claims 18, 19 and 21-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walter D'Arcy Ryan [US 1,428,662] in view of Hanano [US 2004/0062044 A1].

Regarding claim 18, Walter D'Arcy Ryan discloses an illumination system having a light source module [11, 12] but does not disclose the pyramid collector disposed over the emitting surface.

Hanano discloses an image projection having the pyramid collector [13] disposed over the emitting surface of the LED [1] (figures 3, 5, 6, 10 and 11, paragraph 0088).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the film projector of F.W. Gehrke with the pyramid collector as taught by Hanano for purpose of increasing light output efficiency.

Regarding claim 19, Hanano discloses the pyramid collector having a generally square proximate end and a generally rectangular distal end [at 13c] (figure 11).

Regarding claim 21, Hanano discloses an illumination target [12] and a system of optical elements [11] being configured to image the distal end of each pyramid collector onto the illumination target (figures 3 and 27).

Regarding claim 22, Hanano discloses a plurality of LED [1] having a plurality of emitting surfaces disposed next to each other (figures 5 and 6).

Regarding claims 8-10 and 23-25, Hanano discloses LEDs [1] inherently including colors, red, blue and green (paragraph 0010; see figure 9 of U.S. 6,227,669).

Regarding claim 26, Hanano discloses LEDs [1] being red, blue, green colors [inherently from figure 9 of U.S. 6,227,669] illuminating target [12], therefore the target [12] having the red, blue, green color zones (figures 5, 6 and 27).

Regarding claim 27, Hanano discloses a lenticular array [11, 21] (figure 27).

10. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over F.W. Gehrke in view of Lammers et al. [US 6,478,453].

Regarding claim 28, F.W. Gehrke discloses a light source [u1] with an emitting surface (figure 1). F.W. Gehrke does not clearly disclose the substantially optically clear dome disposed over the emitting surface.

Lammers et al. discloses a light projecting apparatus having a light source module [light emitting diode 3] having a substantially optically clear dome [21'] disposed over the emitting surface [at 21] (abstract, figure 2B).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the light source module of F.W. Gehrke with the light emitting diode with the substantially optically clear dome disposed over the emitting surface as taught by Lammers et al. for purpose of providing an advantageous way of using light emitting diode, such as: increasing brightness while saving electrical energy and controllable focusing light.

Allowable Subject Matter

11. Claims 16 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter:

Claims 16 and 20, the illumination further comprises an image-forming device disposed for being illuminated at an angle and having a plurality of mirrors rotatable about a pivot axis, and the non-radially symmetrical aperture has a long dimension and a short dimension and is oriented so that the long dimension is aligned with the pivot axis of the mirrors of the image-forming device.

The limitations discussed above are neither disclosed nor suggested by the prior art of record.

Response to Arguments

13. Applicant's arguments filed 10/13/2006 have been fully considered but they are not persuasive.

Claim 1, the applicant recites Gehrke [US 1,932,817] describes a condenser for film-projectors. However, Gehrke does not teach an optical system that includes an image-forming device. The examiner believes Gehrke discloses a condenser for film projectors thus includes an image-forming device such as film.

Claim 11, the applicant has explained how the lenses [15, 16, 18, 19] of Ryan [US 1,428,662] work and recites that the lenses [15, 16, 18, 19] not being equivalent to the meniscus lenses as claimed. However, the applicant has not clearly pointed out that what feature(s) of the meniscus lenses as claimed being different or advantageous over the lenses [15, 16, 18, 19] of Ryan. Therefore, the figure 2 of Ryan shows all first meniscus lenses [15, 18] have substantially the same shape and size and all second meniscus lenses [16, 19] have substantially the same shape and size.

Claims 6, 18 and others claims are rejected by a new reference, Hanano [US 2004/0062044 A1], which discloses a pyramid collector.

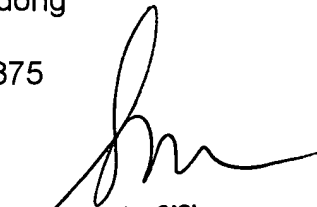
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bao Q. Truong whose telephone number is (571) 272-2383. The examiner can normally be reached on Monday-Friday (8:00 AM - 4:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra L. O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Bao Q. Truong
Examiner
Art Unit 2875



Sandra O'Shea
Supervisory Patent Examiner
Technology Center 2800